

Rake.

Water harrel.

Several Water Buckets.

A Tamper or Rammer—This is made of wood with handles nailed to it, as shown in Fig. 3. The measurement is 4 in. x 2 in. x 2 ft. 6 in.

A Garden Spade.

A Sand Screen, made by nailing a piece of $\frac{1}{4}$ inch mesh wire screen, 2½ ft. x 5 ft., in size, to a frame made of 2 in. x 4 in. scantling.

In addition to the above tools you will require a Mixing Board. This is simply a water-tight platform. It should be (for a 2 batch mixture and for two men to work on) about 10 ft. square. Make it out of 1 in. boards 10 ft. long, surfaced on one side, using five cleats to hold the boards together. The cleats should measure 2 in. x 4 in. x 9 ft. If 1 in. x 6 in. tongue and groove roofers can be obtained, these will answer very nicely, provided they are fairly free from knots. The object of having surfaced boards is to make the shoveling or turning easy. The boards should be so laid as to enable the shoveling to be done with and not against the cracks between the boards. The boards must be drawn up close in nailing, so that no cement "grout" will run through while mixing.

For a larger job, a slightly larger mixing board will be needed.

In setting up your mixing board, choose a place giving plenty of room near the storage piles of sand and stone. Block up your concrete board level, so that the cement grout will not run off on one side, and so that the board will not sag in the middle under the weight on the concrete.

Wheelbarrow "Runs"

You will also have to make wheelbarrow "runs" leading from your mixing board to the spot where the concrete is to be erected. Do not use, for these runs, any old boards that are handy. Make a good run—smooth, and, if much above the ground, at least 20 in. wide. This one feature will lighten and quicken the work to a remarkable extent.

How to Mix Concrete

Having selected the proper materials and arranged the mixing board and runs the next step is the actual process of mixing.

The proportions of materials and the nature of same for various types of work have already been described on pages 136-142. In following the mixing instructions here given, considerable assistance will be obtained by referring to the illustrations with which instructions are interspersed.